

**REMARKS**

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

**Disposition of Claims**

Claims 1-8 are pending in this application. Claim 1 is independent. The remaining claims depend, directly or indirectly, from claim 1.

**Drawings**

Although the Examiner has accepted the drawings as formal, Applicant hereby submits replacement drawing sheets for Figures 1-6, and asks that these replacement drawing sheets be accepted by the Examiner as formal. Additionally, the specification has been amended to comply with the changes made to the drawings. No new subject matter has been added by way of the replacement drawing sheets and the amendments to the specification.

**Objection(s)**

The declaration filed on December 27, 2001 has been objected to by the Examiner for failing to state that the person making the declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 C.F.R. § 1.56. A substitute declaration executed by both inventors and containing the duty to disclose statement was filed with the USPTO on October 29, 2004, and is attached hereto. Accordingly, withdrawal of this objection is respectfully requested.

Further, claim 5 is objected to due to the lack of reciting of the phrase “the trimming step” in the base claim. Claim 5 has been amended to clarify the present invention. Accordingly, withdrawal of this objection is respectfully requested.

**Rejections under 35 U.S.C. § 103**

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,634,098 (“Janniro”) in view of a white paper entitled “Totally Data-driven Automated Testing” (“Zambelich”). This rejection is respectfully traversed.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. See MPEP section 706.02(j).

The initial burden is on the Examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." See MPEP section 706.02(j). When the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the examiner to explain why the combination of the teachings is proper.

The Examiner asserts that Janniro discloses a method of debugging software. The Applicant respectfully disagrees. Janniro relates to *testing* software using automated testing software based on the values of environment variables specified in files stored in a hierarchical directory structure. Specifically, Janniro discloses invoking a test engine, which is passed two parameters. The parameters include the test to be performed and the environment file containing a list of environment modifiers that will be used for a particular test. Based on the arguments received by the test engine, the test engine determines the values to assign to environment variables based on the values specified within the environment modifiers. The test engine then traverses the hierarchical directory structure from source directory down to the target directory of the test being performed on the software, while changing environment variables based on current directory environment modifiers (if any are encountered during the traversal) (*Janniro* col. 9, ll. 39-45). Subsequently, Janniro discloses that a software testing system performs the specified test based on the current values of the environment variables (*Janniro* col. 10, ll. 40-45). A software bug is not used to test software; rather, the software bug is the output of testing

software. Thus, Janniro cannot be used to teach or suggest *debugging* software when problems are found as a result of testing software.

The Examiner asserts that the “test list” disclosed in Janniro (Figure 3, Step 810) equates to a bug list. Applicant respectfully disagrees. The test list disclosed in Janniro includes a list of tests that may be performed on software (col. 18, ll. 58-60). As discussed above, the output of tests are bugs; thus, a list of tests could not be equivalent to a list of bugs. The tests on the test list disclosed in Janniro would have to be performed before a list of bugs could be contemplated. Furthermore, Janniro does not teach a bug list, which is a list containing pairs of minimal modules and input vectors that reproduce the software bug for purposes of debugging (see, e.g., page 12, ll. 5-10 of the specification). Thus, it is clear that the test list of Janniro is not a bug list.

The Examiner admits that Janniro does not disclose or suggest applying a module decomposition test to a software module when the result of a comparison test is positive or appending the software module and the input test vector to a bug list if the result of the comparison test is negative. However, the Examiner asserts that the result of target code decomposition as suggested by Janniro strongly suggests appending the decomposed module portion to a bug list. Applicant respectfully disagrees with the Examiner in his assertion. Specifically, Janniro does not disclose or suggest decomposition of blocks of code. The Examiner incorrectly construes the steps Figure 6 of Janniro to disclose decomposition of code. Further, simply decomposing target code until no blocks remain to compare does not suggest appending the decomposed block to a list of any type. Decomposing blocks of code involves making blocks smaller depending on a result of an applied debugging test, while appending the decomposed blocks to a bug list involves adding the smallest block of code containing a bug to a list of such blocks of code. Thus, Janniro fails to suggest or disclose the claimed invention, and therefore, does not support the rejection.

Further, the Examiner asserts that Zambelich discloses the concept of modular decomposition. However, the Applicant respectfully asserts that the Examiner’s characterization of the teachings in Zambelich is incorrect. Specifically, Zambelich relates to automated testing using an automated test script that, over time, reduces all test cases to fundamental tasks, and writing scripts that perform these tasks independently of one another. Like Janniro, Zambelich does not specifically relate to debugging software using test vectors that isolate the minimal

module containing the software bug. Again, the test scripts would have to run before any bugs could be identified, allowing isolation of the minimal module containing the bug(s). Moreover, Zambelich does not teach a bug list or appending pairs of input vectors and minimal modules to a bug list, as discussed above.

In view of the above, it is clear that Janniro and Zambelich, whether considered separately or in combination, do not support the rejection. The rejection of dependent claims 1-8 is also not supported by Janniro and Zambelich for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

### Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 16159/062002; P5729).

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Respectfully submitted,

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